

IN THE CLAIMS:

This Listing of Claims replaces all prior Listings and versions of claims in the above-identified application.

Listing of Claims

1. (Currently Amended) An isolated peptide selected from the group consisting of:
  - a) a peptide consisting essentially of SEQ ID NO:2;
  - b) a biologically active fragment of SEQ ID NO:2, wherein the fragment promotes myoblast differentiation;
  - c) a peptide consisting essentially of an amino acid sequence that is at least about 70% identical to SEQ ID NO:2, wherein the peptide ~~has the biological activity of SEQ ID NO:2~~ promotes myoblast differentiation; and
  - d) a peptide consisting ~~essentially~~ of an amino acid sequence that differs from SEQ ID NO:2 by one substitution, deletion or insertion of an amino acid residue at a position of SEQ ID NO:2 selected from the group consisting of: 1, 2, 5, 6, 9, 10, 11, 12, 13 and 14, wherein the peptide ~~has the biological activity of SEQ ID NO:2~~ promotes myoblast differentiation.
2. (Original) The isolated peptide of Claim 1, wherein the peptide consists essentially of an amino acid sequence that is at least about 80% identical to SEQ ID NO:2.
3. (Original) The isolated peptide of Claim 1, wherein the peptide consists essentially of an amino acid sequence that is at least about 90% identical to SEQ ID NO:2.
4. (Currently Amended) The isolated peptide of Claim 1, wherein the peptide consists ~~essentially~~ of an amino acid sequence that differs from SEQ ID NO:2 by one substitution, deletion or insertion of an amino acid residue at a position of SEQ ID NO:2 selected from the group consisting of: 1, 2, 5, 6, 9, 10, 11 and 12.
5. (Currently Amended) The isolated peptide of Claim 1, wherein the peptide consists ~~essentially~~ of an amino acid sequence that differs from SEQ ID NO:2 by one substitution, deletion or insertion of an amino acid residue at a position of SEQ ID NO:2 selected from the group consisting of: 1, 2, 5, 6, 9, 10 and 11.
6. (Original) The isolated peptide of Claim 1, wherein the peptide consists essentially of SEQ ID NO:2.

7. (Original) The isolated peptide of Claim 1, wherein the peptide comprises a modification selected from the group consisting of farnesylation, carboxymethylation, geranylgeranylation, and complexing with a lipid carrier.

8. (Original) A therapeutic composition comprising the isolated peptide of Claim 1 and a pharmaceutically acceptable carrier.

9-13. (Cancelled)

14. (Currently Amended) A therapeutic protein comprising a protein selected from the group consisting of:

a) a protein comprising an amino acid sequence represented by SEQ ID NO:4;

b) a protein ~~comprising~~ consisting essentially of at least 600 amino acids biologically active fragment of SEQ ID NO:4, wherein the protein has prelamins A or lamin A biological activity; and

c) a protein comprising an amino acid sequence that is at least about 70% 95% identical to SEQ ID NO:4, wherein the protein has prelamins A or lamin A biological activity;

wherein the protein is chemically or recombinantly attached to a therapeutic agent that increases the half-life of the protein in cardiac or skeletal muscle tissue.

15-22. (Cancelled)

23. (Withdrawn) A method to identify compounds that regulate myoblast activation and differentiation, comprising:

a) contacting a prelamins A protein or a prelamins A pre peptide with a test compound under conditions suitable for binding of the prelamins A protein or prelamins A pre peptide by the test compound; and

b) detecting binding of the prelamins A protein or prelamins A pre peptide by the test compound.

24-41. (Cancelled)

42. (Withdrawn) A method to promote myoblast activation and regeneration of damaged, degenerated or atrophied cardiac and skeletal myocytes, comprising administering to a

patient that has damaged, degenerated or atrophied cardiac or skeletal myocytes the isolated peptide of Claim 1, or a composition comprising the peptide.

43. (Withdrawn) A method to stimulate cardiac or skeletal muscle growth in a mammal, comprising administering to a mammal the isolated peptide of Claim 1, or a composition comprising the peptide.

44. (Withdrawn) A method to treat cardiac and skeletal muscle disorders, comprising administering to a patient that has a cardiac or skeletal muscle disorder, the therapeutic protein of Claim 14 or a composition comprising the therapeutic protein.

45. (Withdrawn) The method of Claim 44, wherein said disorder is selected from the group consisting of: dilated cardiomyopathy, Emery-Dreifuss muscular dystrophy, limb-girdle muscular dystrophy, partial lipodystrophy, axonal neuropathy, and mandibuloacral dysplasia.

46. (Previously Presented) The isolated peptide of Claim 1, wherein the peptide consists essentially of an amino acid sequence that is at least about 85% identical to SEQ ID NO:2.

47. (Currently Amended) The isolated peptide of Claim 1, wherein the peptide consists essentially of an amino acid sequence that differs from SEQ ID NO:2 by one substitution of an amino acid residue at a position of SEQ ID NO:2 selected from the group consisting of: 1, 2, 5, 6, 9, 10, 11, 12, 13 and 14, wherein the peptide has the biological activity of SEQ ID NO:2.

48. (Currently Amended) The isolated peptide of Claim 1, wherein the peptide consists essentially of an amino acid sequence that differs from SEQ ID NO:2 by one substitution of an amino acid residue at a position of SEQ ID NO:2 selected from the group consisting of: 1, 2, 5, 6, 9, 10 and 11.

49. (Cancelled)

50. (Previously Presented) The therapeutic protein of Claim 14, comprising a protein comprising an amino acid sequence that is at least about 97% identical to SEQ ID NO:4, wherein the protein has prelamin A or lamin A biological activity, and wherein the protein is chemically or recombinantly attached to a therapeutic agent that increases the half-life of the protein in cardiac or skeletal muscle tissue.

51. (Previously Presented) The therapeutic protein of Claim 14, comprising a protein comprising an amino acid sequence that is at least about 99% identical to SEQ ID NO:4, wherein the protein has prelamin A or lamin A biological activity, and wherein the protein is chemically or recombinantly attached to a therapeutic agent that increases the half-life of the protein in cardiac or skeletal muscle tissue.

52. (Previously Presented) The therapeutic protein of Claim 14, comprising a protein comprising an amino acid sequence represented by SEQ ID NO:4, wherein the protein is chemically or recombinantly attached to a therapeutic agent that increases the half-life of the protein in cardiac or skeletal muscle tissue.

53-57. (Cancelled)

58. (New) The isolated peptide of Claim 1, wherein the peptide consists essentially of an amino acid sequence that is at least about 70% identical to SEQ ID NO:2.

59. (New) The isolated peptide of Claim 1, wherein the peptide consists of an amino acid sequence that is at least about 70% identical to SEQ ID NO:2.

60. (New) The therapeutic protein of Claim 14, comprising a protein comprising an amino acid sequence that is at least about 95% identical to SEQ ID NO:4, wherein the protein has prelamin A or lamin A biological activity, and wherein the protein is chemically or recombinantly attached to a therapeutic agent that increases the half-life of the protein in cardiac or skeletal muscle tissue.